WHAT IS CLAIMED IS:

1. A method of testing a cable, said method comprising:

measuring at least one inductive ratio for the cable;

determining an inductive gap from the at least one inductive ratio;

measuring a parallel impedance of the cable; and

determining a resistance of the cable based on the inductive gap and the parallel impedance.

2. A method in accordance with Claim 1 wherein measuring an inductive ratio for the cable comprises measuring the inductive ratio for the cable at each of a plurality of predetermined frequencies.

3. A method in accordance with Claim 2 wherein measuring an inductive ratio for the cable comprises measuring the inductive ratio for the cable using three different predetermined frequencies.

4. A method in accordance with Claim 1 wherein measuring at least one inductive ratio for the cable comprises measuring the at least one inductive ratio for the cable substantially simultaneously with measuring the parallel impedance of the cable in real-time.

5. A method in accordance with Claim 1 wherein determining an inductive gap from the inductive ratio comprises averaging the at least one inductive ratios.

6. A method in accordance with Claim 1 wherein determining a resistance of the cable comprises locating the resistance value using a look-up table.

7. A method in accordance with Claim 6 wherein locating a resistance value using a look-up table comprises locating the resistance value using a look-up table of inductive gap versus parallel impedance.

8. A method in accordance with Claim 7 wherein the look-up table is empirically derived and wherein locating the resistance value using the look-up table further comprises:

determining a first look-up table curve using a first predetermined resistance coupled in circuit parallel with the cable;

determining a second look-up table curve using a second predetermined resistance coupled in circuit parallel with the cable wherein the second resistance is different than the first resistance;

correlating an average of the cable inductive ratios to a look-up table inductive gap;

correlating a parallel impedance of the cable to a look-up table parallel impedance; and

determining a cable resistance based on the look-up table.

9. A method of testing a digital proximity system transducer cable for fluid intrusion, said method comprising:

measuring three inductive ratio values for the cable, each inductive ratio measured at a different excitation frequency;

averaging the inductive ratio values;

determining an inductive gap from the at least one inductive ratio;

measuring a parallel impedance of the cable substantially simultaneously with measuring the cable inductive ratio; and

determining a resistance of the cable based on the inductive gap and the parallel impedance using a look-up table, the resistance being indicative of an amount of fluid intrusion into the cable.

10. A method in accordance with Claim 9 wherein locating a resistance value using a look-up table comprises locating the resistance value using a look-up table of inductive gap versus parallel impedance.

11. A system for testing a cable, said system comprising:

an eddy current transducer positioned in RF communication with a target, said transducer configured to generate an output signal relative to a gap distance; and

a digital impedance measurement system configured to receive the output signal through a cable that is coupled in series with said transducer, said system further configured to measure an inductive ratio for the cable and transducer series combination at each of at least one predetermined frequency, said system comprising a memory that includes information that is relative to an inductive gap measurement and a parallel impedance gap measurement.

12. A system in accordance with Claim 11 wherein said system is configured to measure the inductive ratio for said cable and transducer combination using three different predetermined frequencies.

13. A system in accordance with Claim 11 wherein said system is configured to measure the at least one inductive ratio for said cable and transducer combination substantially simultaneously with measuring a parallel impedance of said cable and transducer combination.

14. A system in accordance with Claim 11 wherein said system is configured to average the at least one inductive ratio.

15. A system in accordance with Claim 11 wherein said system is further configured to determine the cable resistance value by using a look-up table.

16. A system in accordance with Claim 15 wherein said system is configured to locate the resistance value using a look-up table of inductive gap versus parallel impedance.

17. A system in accordance with Claim 16 wherein the look-up table is empirically derived and wherein said system is configured to:

determine a first look-up table curve using a first predetermined resistance coupled in circuit parallel with the cable;

determine a second look-up table curve using a second predetermined resistance coupled in circuit parallel with the cable wherein the second resistance is different than the first resistance;

correlate an average of the cable inductive ratios to a look-up table inductive gap;

correlate a parallel impedance of the cable to a look-up table parallel impedance; and

determine a cable resistance based on the look-up table.

18. A system in accordance with Claim 11 wherein said system is a digital proximity system, said target is a rotatable shaft of a rotary machine, said system further configured to determine an amount of fluid intrusion into the cable while said transducer remains installed in the machine and said cable remains coupled to said transducer.

19. A system in accordance with Claim 11 comprising a display, said display configured to output a representation of the information that is relative to an inductive gap measurement and a parallel impedance gap measurement.

20. A system in accordance with Claim 11 comprising a display, said display configured to output a graphical representation of the information that is relative to an inductive gap measurement and a parallel impedance gap measurement.